

MISSOURI resources

Winter 2004 • Vol

Number 1



Director's Comment

I've been speaking a lot lately on the ties between environmental stewardship and economic development. In finding this balance, we are reminded of what we knew in more prosperous times: environmental protection supports economic growth.

Take, for example, a recent economic impact study completed by the University of Missouri-Columbia, which showed Missouri's 83 state parks and historic sites contribute \$538 million annually to the state's economy. The beauty of it is that our 83 state parks and historic sites spread that economic benefit throughout the state. With approximately 18 million people visiting our state parks system every year, this is an economic engine built on taking good care of our natural resources.

Another economic booster for Missouri is our water pollution control and drinking water revolving funds. Missouri has one of the top five State Revolving Funds in the nation. Since 1989, it has provided more than \$1.13 billion to 300 Missouri communities for wastewater and drinking water facilities. These communities saved more than \$350 million in interest, and more than 8,800 jobs were created, thanks to the fund.

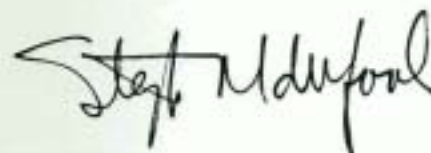
Or, did you know that part of the 50-cent fee you paid on each new tire you purchased helped fund safer playgrounds for Missouri schoolchildren? Children in 259 Missouri communities can now play more safely on recycled rubber playground surfaces, thanks to the \$1.3 million in grants provided by Missouri's waste tire fee. Yet another example of economic improvement working hand in hand with environmental protection. This one is at risk, however. Our waste tire fee was not extended during the 2003 legislative session, so it will expire Jan. 1, 2004. Your 50 cents per tire also removed 12 million waste tires from illegal dumps. We estimate that 5 million waste tires are generated in Missouri every year with 2.9 million remaining in known illegal dumps. When similar fees expired in other states, dumping increased.

Taking good care of Missouri's resources requires dollars and sense.

Governing Magazine has ranked Missouri 50th in environmental funding two years in a row. Although the Department of Natural Resources fiscal year 2004 budget is \$332 million, we have sustained a 65.5 percent cut in our general revenue funding since fiscal year 2001. That means only \$8.9 million of our \$332 million budget comes from general revenue. The rest comes from federal dollars, fees, the parks-and-soils sales tax and other revenue streams. Approximately 68 percent of our budget goes to funding and assisting Missouri communities.

Slightly more than half of our budget goes to protecting Missouri's water quality and promoting soil conservation. Missouri has 22,000 miles of free-flowing streams; more than 50 percent need help. We have 293,000 acres of lakes in Missouri; more than 30 percent of those lake acres could be improved. Since 1992, Missouri has reduced its rate of soil erosion more than any other state. But, we now rank 7th in the nation for our rate of soil erosion. There is still work to do.

Because there is still this work – and more – to do, I appreciate your support for Missouri's natural resources now more than ever. It's critical that we all see that protecting our environment is just good business sense. We must remember what we knew in more prosperous times: environmental protection supports economic growth.



Steve Mahfood
Missouri Department of Natural Resources



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Winter 2004
Volume 21 • Number 1

State of Missouri
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Director, Missouri Department
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Deputy Department Director
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Deputy Department Director
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Kerry Cordray
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John Knudsen
Connie Patterson

Kenneth Seemey
Design Director

Luigi Branyan
Associate Designer

Belinda Hughes
Photographer

Scott Myers
Circulation

Liz Barnhart
Jeanne E. Binkley

Mission Statement

The mission of the Department of Natural Resources is to preserve, protect, restore and enhance Missouri's natural, cultural and energy resources and to inspire their enjoyment and responsible use for present and future generations.

"Integrity and excellence in all we do"

MISSOURI RESOURCES

is published three times per year by the Missouri Department of Natural Resources to inform readers about important natural resource issues and how they are being addressed. Any correspondence should be directed to the editor at the Department of Natural Resources, Publications, P.O. Box 176, Jefferson City, MO 65102-0176, or call 1-800-361-4827. E-mail address: moreadtr@dnr.mo.gov. DNR's home page: www.dnr.mo.gov

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Missouri Resources is printed with soy ink on recycled paper at Santa Publications Group, Liberty, Missouri.





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by Kathy Deters

For 30 years, the protection and enhancement of our natural and cultural resources has been entrusted to the Missouri Department of Natural Resources. Ever at risk, Missouri's environmental health is zealously protected.

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Holding in the Heat



Above right: The Papinville Bridge in Bates County is but one of Missouri's properties listed on the National Register of Historic Places. **Above:** Lewis and Clark spent several days camped near the confluence of the Missouri and Kansas rivers in June 1804. Imagine how different their view would have been 200 years ago. (See related story on page 2.)

COVER: Hoarfrost coats the winter landscape in Callaway County.

Cover photo by Scott Myers.



In 1804, Meriwether Lewis and William Clark set out with their Corps of Discovery to explore lands west of the Mississippi River in the Louisiana Territory. Two hundred years later, adventure-seekers and history buffs have the opportunity to take their own journey of discovery during the bicentennial of this historic event.

While some historians debate what should be considered as the true beginning of the expedition, there is no disagreement that a significant segment of the journey began when Lewis and Clark and a crew of over 45 entered the Missouri River below St. Charles on May 14, 1804. The Corps of Discovery's 600-mile journey through present-day Missouri took them until July 18, 1804, as they traveled on to the Pacific Ocean.

Just as Missouri was at the forefront of the expedition in 1804, our state will be at the forefront of bicentennial activities throughout 2004. Public awareness of this resulted in an executive order that formed a commission of individuals and agencies to coordinate bicentennial activities within Missouri. The Missouri Lewis and Clark Bicentennial Commission works with the 10 other states that lie along the Lewis and Clark National Historic Trail and coordinates activities with the National Council of the Lewis and Clark Bicentennial.

Staff support for the commission is being provided by the

REDISCOVERY

MISSOURI TO SHOWCASE FIRST LEG OF

by Sue Holst
photographs by Scott Myers

Missouri Department of Natural Resources. "Supporting the Lewis and Clark commemoration is very appropriate for our department because we have such strong historical roots in our state parks and historic sites and it fits with our mission," said Steve Mahfood, department director and commission member. "This is especially true for Katy Trail State Park, which follows the Missouri River for much of its route."

In addition to the Department of Natural Resources, major state agencies involved in the commission include the departments of Conservation, Transportation, Public Safety, and Elementary and Secondary Education along with the Division of Tourism and the Secretary of State's Office. Efforts include everything from providing information through brochures, exhibits and curricula, administering community grants, and planning for river safety and services.

Two major projects the Department of Natural Resources has under way for the bicentennial commemoration include the development of two new facilities. The Edward "Ted" and Pat Jones-Confluence Point State Park near West Alton in St.

Charles County is being developed at the confluence of the Missouri and Mississippi rivers. Plans for the 1,118-acre park include trails, opportunities for nature study, and exhibits on Lewis and Clark.

The second major project is the development of Clark's Hill/Norton State Historic Site in Cole County. On June 1, 1804, and Sept. 19, 1806, the Corps of Discovery camped at the confluence of the Missouri and Osage rivers near present-day Osage City. On June 2, 1804, Clark noted in his journal that he climbed a nearby hill to get a better view of the confluence. The 13-acre state historic site that contains this hill will include a trail and an overlook with interpretive information. It is scheduled to be open to the public in June 2004.

In addition to the new facilities, the department is working with private landowners to allow guided, limited access to viewing Sugar Loaf Rock, a feature located near Jefferson City that was noted in Clark's journal.

These projects for the Department of Natural Resources are just part of the commitment by many groups commemorate the Lewis and Clark bicentennial. For those wanting to observe the bicentennial, a mul-



(Opposite page) Sgt. John Ordway, portrayed by Peter Geery, and an Eastern Longhunter, portrayed by Dale Smith of the Discovery Expedition of St. Charles, Missouri, wait for local school groups to arrive at a reenactment event in Jefferson City. (Left) A flock of white pelicans, frequent mid-winter visitors to the area, gather near the Edward "Ted" and Pat Jones-Confluence Point State Park. The new park at the confluence of the Missouri and Mississippi rivers is scheduled to open in May 2004.

LEWIS AND CLARK'S EPIC JOURNEY



DIVERSE VOICES - MULTIPLE PERSPECTIVES

The Lewis and Clark Expedition was about more than just Lewis and Clark, and national and Missouri organizations are committed to telling the entire **story**. "It was actually an international expedition with many cultures represented, including French boatmen and several of French-Shawnee **parentage**. This was in addition to the 50 native tribes the Corps of Discovery encountered," said Robert Archibald, **Ph.D.**, chairman of the National Council of the Lewis and Clark **Bicentennial**.

"Throughout the bicentennial activities, at all levels, it is important to make room for all diverse voices and multiple perspectives," Archibald **said**. **These include York, Clark's black slave, and Sacagawea, a Shoshone woman who joined the expedition in North Dakota. "We stress native participation, and we ask native people to define their participation.**

"It is important to recognize that events in history appear differently, depending on who you are and where you are standing. The expedition was different for York than it was for Clark. If you are one of the tribes the expedition encountered, in what sense did Lewis and Clark discover you? If you're standing in a different place, the expedition is coming, not going," Archibald **said**.

Because of this commitment to diversity, visitors can be assured that they will be able to hear all aspects and perspectives of this historic journey.

titude of opportunities are available, ranging from reenactments to interpretive programs and festivals. Many of these events will roughly follow the dates of the original expedition.

"The **bicentennial** is an opportunity for communities to reacquaint themselves with their own history in addition to promoting tourism. The activities will be fun as well as educational," said Robert Archibald, **Ph.D.**, director of the Missouri Historical Society, co-chair of the Missouri Lewis and Clark Bicentennial Commission and director of the National Council of the Lewis and Clark Bicentennial.

The first stop on anyone's personal journey of discovery should be the Missouri Lewis and Clark Bicentennial Commission. The commission's Web site serves as a clearinghouse for information on the bicentennial, including exhibits, curricula, special events, and information on participating communities. The commission's free brochure, "Lewis and Clark in Missouri" gives an overview of what Lewis and Clark encountered in Missouri and what can still be seen and done.

An easy way to follow in Lewis and Clark's footsteps is along designated trails. The Lewis and Clark National Historic Trail has been designated by the National Park Service. In Missouri, the trail follows state highways on both north and south sides of the Missouri River. For those wanting to get closer, Katy Trail State Park offers walking and bicycling and follows the Lewis and Clark National Historic Trail along the Missouri River,

To showcase the many areas and facilities in Missouri related to the expedition, more than 90 interpretive markers have been developed at publicly accessible locations. These markers are located along the Missouri River as well as the Mississippi River, which Lewis and Clark traveled up to reach St. Louis in the fall of 1803. Many special events are planned through-

out Missouri with four events designated as National Signature Events by the National Council of the Lewis and Clark Bicentennial. In 2004, these include the Three Flags Ceremony March 10-14 in St. Louis; Preparations Complete, the Expedition Faces West event May 14-23 in St. Charles; and the Heart of America: A Journey Fourth on July 3-4 in the Kansas City area. The fourth National Signature Event will be in September 2006 in St. Louis to mark the 200th anniversary of the return of the expedition to St. Louis.

In conjunction with the National Signature Events and making other stops at river communities in Missouri will be the National Park Service's Corps of Discovery II traveling exhibit. This extensive exhibit will be accompanied by "The Tent of Many Voices," which will provide interpretation on many aspects of the exhibition.

Visitors will be able to see and feel history come to life with the arrival on the river of the Discovery Expedition of St. Charles. The group has built replicas of the keelboat and red and white pirogues used by Lewis and Clark and will be re-enacting the journey following the journal as closely as possible.

There are numerous exhibits and places to see related to the bicentennial, but a

must-see for anyone interested in the expedition is the "Lewis and Clark: The National Bicentennial Exhibition." Developed by the Missouri Historical Society and opening in January 2004 in the Missouri History Museum in St. Louis, the exhibit includes the most extensive collection of Lewis and Clark artifacts and memorabilia ever assembled. Organizations and communities can schedule a smaller traveling version of this exhibit by contacting the department's Missouri State Museum at (573) 751-2854.

The activities mentioned are just a few of the ways individuals can participate. "When all is said and done, I hope the lasting legacy of this bicentennial is to recognize the human desire for risk taking and adventure — we all have a need to explore the unknown," Archibald said.

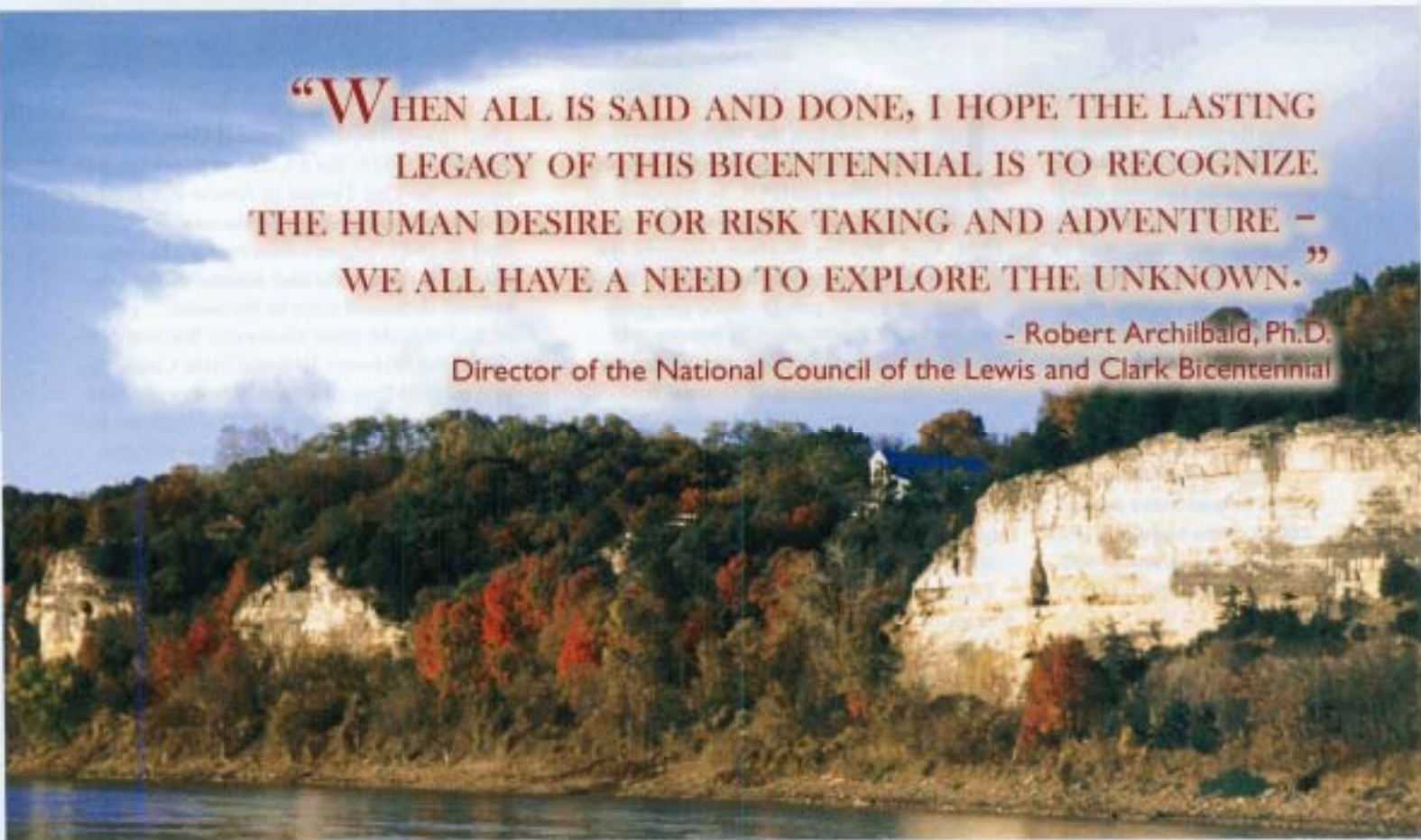
For information or a free brochure on how to begin your own journey of discovery, contact the Missouri Lewis and Clark Bicentennial Commission at 1-800-334-6946 or [lewisandclark@dnr.mo.gov], or visit the Web at [www.lewisandclarkmo.com]. ☀

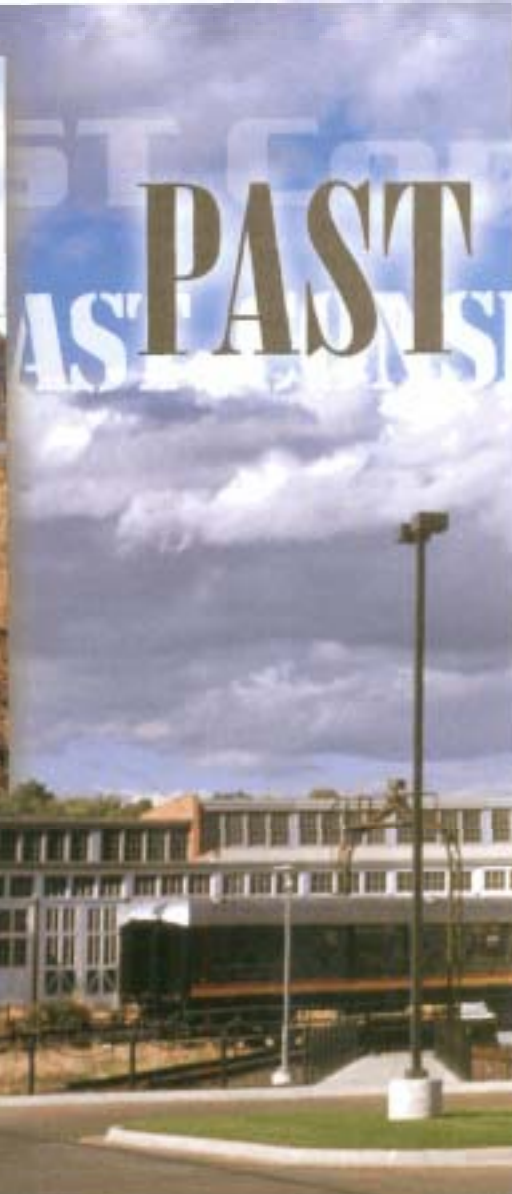
Sue Holst is the division information officer for the Department of Natural Resources' Division of State Parks.

(Opposite page) A Missouri National Guard helicopter transports building supplies to the new overlook at Clark's Hill/Norton State Historic Site outside Osage City. The air drop was used as a training mission for the Guard. The new state historic site is scheduled to open in June 2004. (Below) Katy Trail State Park winds between dramatic bluffs and the Missouri River near the city of Rocheport.

"WHEN ALL IS SAID AND DONE, I HOPE THE LASTING LEGACY OF THIS BICENTENNIAL IS TO RECOGNIZE THE HUMAN DESIRE FOR RISK TAKING AND ADVENTURE — WE ALL HAVE A NEED TO EXPLORE THE UNKNOWN."

**- Robert Archibald, Ph.D.
Director of the National Council of the Lewis and Clark Bicentennial**





The Kansas City Terminal Roundhouse is a historic preservation success story. The 22-acre site, which was originally developed to maintain rail cars and steam engines, contained obsolete buildings and contaminated soil. The department's Voluntary Cleanup Program helped the developers remove pollutants while rehabilitation tax credits helped make preservation of the buildings and the original turntable economically feasible.

July 2003 marked the 35th anniversary of the Missouri State Historic Preservation Office (SHPO). In response to the National Historic Preservation Act of 1966, Gov. Warren Hearnes assigned the director of the Missouri State Parks Board to develop a state preservation program and by 1968, the Historical Survey and Planning Office was born. SHPO is now part of the Department of Natural Resources' Outreach and Assistance Center, but its mission is still the same: to identify and document the state's cultural resources, promote the protection of these resources, and to encourage the goals and ideals of historic preservation in Missouri.

Missouri's preservation movement began in the early 20th century. In 1913, the Daughters of the American Revolution began marking Santa Fe Trail-related sites across the state. The group later sponsored

a bill, passed by the Missouri General Assembly in 1923, for \$5,000 to purchase and restore the Old Tavern in Arrow Rock. The Missouri Archaeological Society, organized in 1935, began collecting archeological site information and maintains data on several thousand sites in the state.

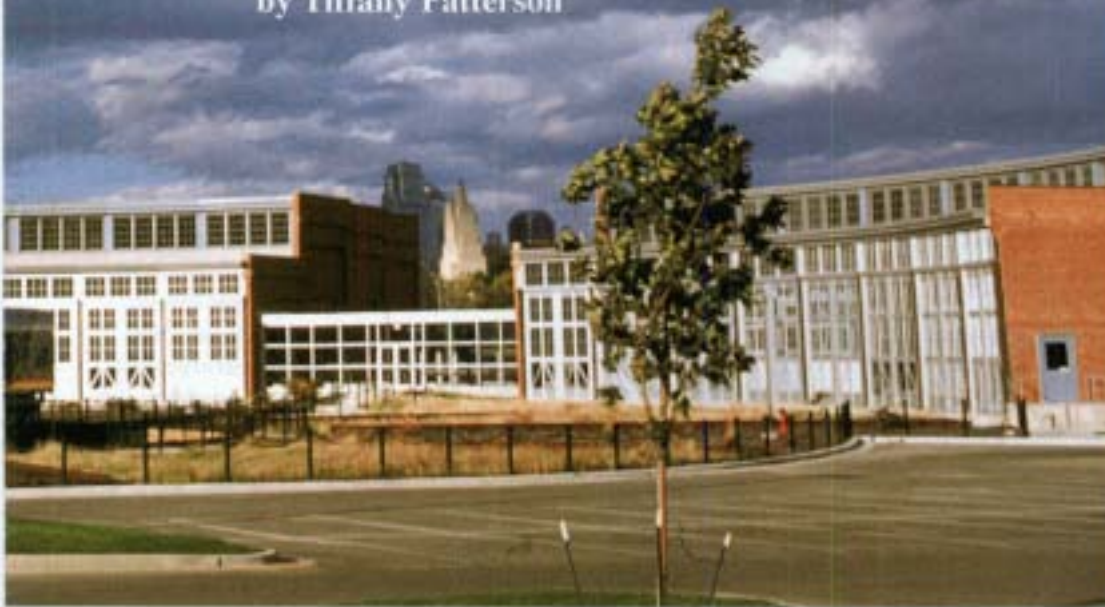
In 1963, the State Historical Society published the Missouri Historic Sites Catalogue that included significant historic properties in Missouri's counties. SHPO is built on the foundation of this early work and still depends on its preservation partners to preserve our state's rich cultural heritage.

The National Historic Preservation Act of 1966 assisted states in promoting the preservation of historic resources. The act outlined the requirements for developing state historic preservation offices, provided grant funding, and established the National Register of Historic Places. Section 106 of the act

Considerations

Incentives and Commitment Keys to Restoration, Preservation

by Tiffany Patterson



created accountability through which federal agencies must consider the effects of their projects on historic properties.

State government also provides tools for preservation. State laws provide some protection for human remains found outside known cemeteries, as well as historic shipwrecks in Missouri's rivers. Better-known programs include the State Rehabilitation Tax Credits that provide incentives for rehabilitating National Register-listed buildings. A 2001 executive order from Gov. Bob Holden encourages the use of buildings in historic downtowns for state office space. These state and federal laws have furthered rehabilitation efforts in Missouri.

The National Register

All of the programs that SHPO is involved in are interconnected with the National Register of Historic Places. The Na-

tional Register is the official federal list of historic districts, buildings, sites, structures or objects "worthy of preservation."

To be eligible for listing, a property must be significant in American history, architecture, archeology, engineering or culture and must retain its authentic historic identity and character. To be listed on the National Register, someone, with the permission of the private property owner, must nominate the property.

To date, more than 1,600 nominations, representing approximately 20,000 of Missouri's historic properties, have been listed on the National Register.

Myths and misconceptions about the National Register are numerous. The program cannot stop the bulldozers, does not bestow tons of money, nor does it place cumbersome governmental restrictions on the maintenance and use of a listed proper-

DNR photos by Scott Myers

MISSOURI
HISTORICAL
SOCIETY
a m
just west of the city center
from the state history wing
located at 1111 North 1st St.

Sheehan-Horton House

grant to install an elevator, and consulted with SHPO under Section 106 of the



National Historic Preservation Act. Per the review, the courthouse was soon listed on the National Register.

In celebration of the 100th birthday of the courthouse, constructed in 1901, the county is rehabilitating the interior and making plans to restore the exterior of the building. Tours of the courthouse are also available to, in the words of Bates County Commissioner Randy Pike, "apose people to the courthouse and the history of the county." As part of the restoration, workers have "completely refinished the hardwood floors, repainted interior walls, and in the near future, plan to restore the courtroom."

The restoration of the courthouse has had a ripple effect. Since 2001, the Hudson City School, Papinville Bridge, and Palace Hotel also have been listed on the National Register. Friends of the Hudson School are repairing it for continued use as a community meeting place, and the Palace Hotel in Butler is undergoing rehabilitation using state and federal tax credits.

Interest in the hotel grew after the governor issued an executive order encouraging the reuse of historic downtown buildings for state offices.

Most historic buildings easily transition to new uses to become vital parts of their community. Finding new uses for historic buildings can be a challenge. When the developers of Westside Business Park began looking at the 22-acre Kansas City Terminal Roundhouse site, the fate of the historic buildings was far from secure. The site had been developed in 1913-1914 to maintain steam engines and train cars for railroad companies using Union Station. By 1960, the buildings were largely unused.

In addition to the obsolete buildings, petroleum and solvents used to clean and re-steam engines were present. Through the department's Voluntary Cleanup Program, lead, asbestos, and 40,000 cubic yards of contaminated soil were removed.



(Above) Caroline Petrie is proud of her successful rehabilitation of the Sheehan-Horton House in St. Joseph.

With the help of a grant from the city and Missouri's historic rehabilitation tax credits, she turned the dilapidated six-room house, built in 1859, into a historic showpiece of beauty. (Opposite page) In Butler, developers used state and federal tax credits to rehab the Palace Hotel for use as office space.

ty. The National Register neither guarantees nor requires the preservation of historic properties. Instead, the program is a tool that offers opportunities for the preservation of local history and the economic revitalization of our communities.

Highlighting Successes

Sometimes our programs have unexpected outcomes. In 2001, Bates County did not have a single property listed on the National Register or Historic Places. The county commission, however, was committed to the preservation of the county's history and the continued use of the courthouse. The county applied for a federal

Historic Preservation file photo

DNR photo by Scott Myers

Studies for redevelopment began in 1994 using funds from the U.S. Department of Housing and Urban Development (HUD). With HUD assistance, Westside Industrial Park, LLC, a coalition of private investors and economic development organizations, began work. Because of the federal funding, SHPO reviewed the effects of the project on the historic roundhouse and associated buildings. Through rehabilitation tax credits and the commitment of the developers, the roundhouses were restored. The developers also kept the turntable used to rotate locomotives, as well as some train tracks coming in and out of the roundhouses. These historic features, provide a sense of the site's historic role in Kansas City's railroad industry.

Revitalized Communities

Commercial and residential reuse of historic buildings is essential to the revitalization of our communities. Hundreds of historic homes have been saved through the care of committed individuals. Cities also can take a lead in revitalization by providing incentives for private investment in historic neighborhoods.

To encourage restoration in St. Joseph, the city offers low-interest loan programs to help bridge the gap between traditional bank financing and the rehabilitation needs of historic resources. St. Joseph also administers a Save our Heritage grant program. According to Robert Myers, preservation planner for the city, the grant is for "buildings with critical needs and makes the difference between a building being saved or lost." He's seen a "unbelievable transformation" in buildings in St. Joseph. An example is the Sheehan-Horton House in the city's Museum Hill Historic District. In 2002, Caroline Petrie received a Save Our Heritage grant to restore the house. Along with state tax incentives, and a lot of personal investment, Petrie was able to turn the dilapidated frame house into a comfortable home and asset to St. Joseph.

Preservation incentives from federal, state and local governments, and technical assistance from SHPO can help make re-

habilitation feasible, but it takes the commitment of our preservation partners to make it happen. If you are interested in preserving historic resources in your community, contact the State Historic Preservation Office. If you would like to know what has already been recognized as historic in your area or would like to see updates on these and other preservation success stories across the state, visit SHPO's Web site at [www.dnr.mo.gov/shpo/homepage.htm].

Tiffany Patterson is a cultural resource preservationist with the Outreach and Assistance Center's State Historic Preservation office.





Caring Concern

Protecting Missouri's Environmental Health a Natural, Long-term Commitment
by Kathy Deters

In 1974, growing concern for protection of our state's natural resources and environment, as well as a growing number of federal environmental protection programs being delegated to the states, led the Missouri Legislature to create the Missouri Department of Natural Resources. The agency was more a consolidation of existing entities than the creation of a new one. This streamlining effort combined the skills, efforts and technology of people who shared common goals.

For 30 years, the protection of Missouri's air, water, land, energy, cultural and historic resources has never been in more capable and caring hands.

The 1970s: Nation Feels "The Crude Oil Blues"

The nation heralded the beginning of this decade with the world's first Earth Day celebration, April 22, 1970, which was a fitting beginning to a decade of growing environmental awareness. In the first four years of the '70s, Congress passed the Clean Air Act, the Clean Water Act, the En-

dangered Species Act, the Safe Drinking Water Act and established the U.S. Environmental Protection Agency (EPA).

The 1973 OPEC oil embargo forced Americans to take a hard look at their energy consumption. This gave rise to many important programs at both the state and federal level. Families across the country looked for ways to make their homes and vehicles more energy efficient. It even inspired Jerry Reed to compose *The Crude Oil Blues*.

"The message in the 1970s was energy conservation – the President of the United States wearing a cardi-

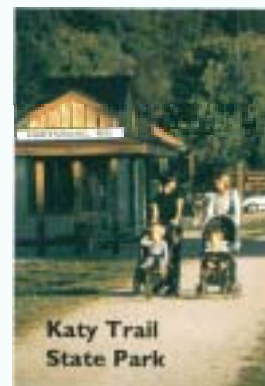


the Department of Natural Resources' Energy Center.

The 1980s: Times Beach; New Katy Trail State Park

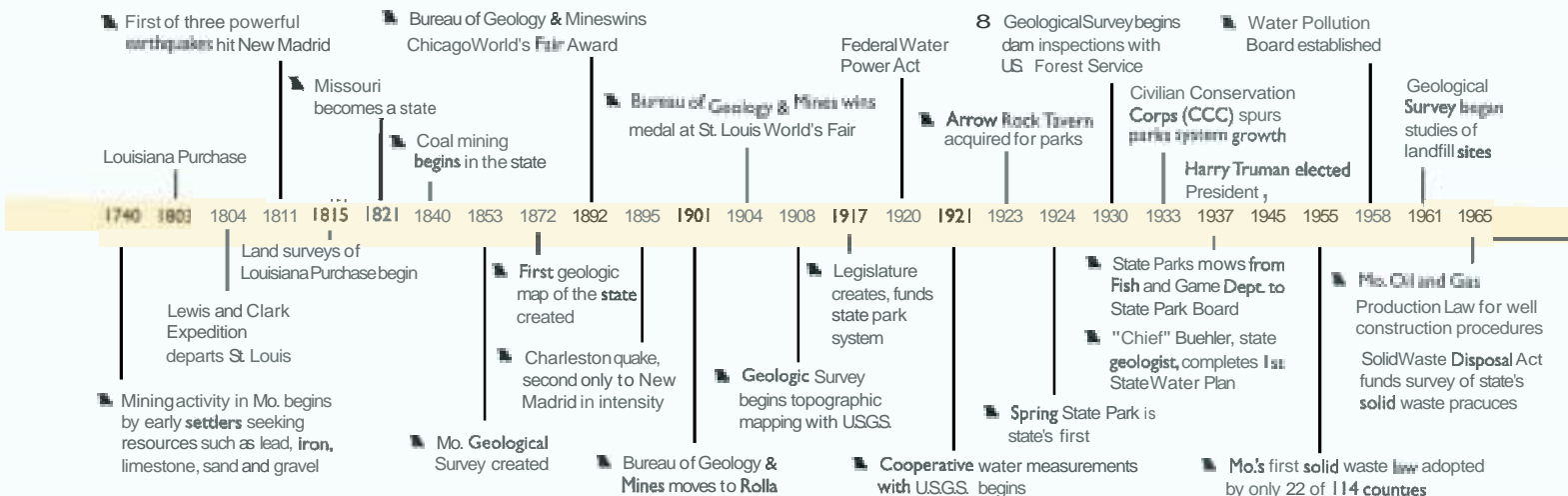
Across the country, the 1980s seemed to reflect a growing love of adventure.

Movies like *Romancing the Stone*, *Raiders of the Lost Ark* and *Crocodile Dundee* dominated the box office. With this love of adventure



came a growing interest in the outdoors. In Missouri, this trend marked the beginning of a wonderful opportunity: Katy Trail State Park.

In 1986, the Missouri-Kansas-Texas (MKT) Railroad, commonly known as the "Katy," ceased operation on its route from Machens in St. Charles



Environmental Timeline 1740-2003

Missouri Entry

1988 Gasconade Oil Spill



County to Sedalia in Pettis County. The opportunity for the department to acquire the right-of-way was made possible by the National Trails System Act. Thanks to a generous donation by the late Edward D, "Ted" and Pat Jones, the department was able to secure the

right-of-way and construct the trail. In 1991, Union Pacific donated an additional 33 miles of rail corridor from Sedalia to east of Clinton. Katy Trail State Park now is the longest walking and biking trail in the nation – extending 225 miles.

Darwin Hindman, now mayor of Columbra, headed the statewide campaign for the trail. Hindman notes the significant economic benefits of this trail, and a new awareness of some of Missouri's natural resources.

"Before the trail opened, the Missouri River was almost never visited or even seen by the average Missourian, except when he or she would look out an airplane window or try and peer over the railing of a highway bridge," Hindman said. "The trail brings Missourians to their river."

In 1982, the department also began one of its biggest environmental cleanups – Times Beach. This site, located 20 miles southwest of St. Louis, became contaminated when oil con-

taining dioxin was sprayed on roads for dust control in the early 1970s. Contamination was discovered in 1982, and the town was soon evacuated.

The \$200 million cleanup was accomplished through a cooperative effort with Agribusiness Technologies, the Department of Natural Resources and the U.S. Environmental Protection Agency. Once the cleanup was completed in 1997, the department established Route 66 State Park.



tained the federal one-hour ozone standard in 1992; St. Louis later attained this standard in 2003.

"For those businesses engaged in the mainstream of air quality discussion over the past decade, there was consider-

able relief and delight over the announcement that we had attained the standard," said Michael Alessandrini, director of environmental affairs with the St. Louis Regional Chamber and Growth Association.

"In addition to a strong sense of accomplishment, all recognized that along the long road to clean air in St. Louis, it will require considerable effort related to the new, stricter ozone, particulate and other air quality standards."

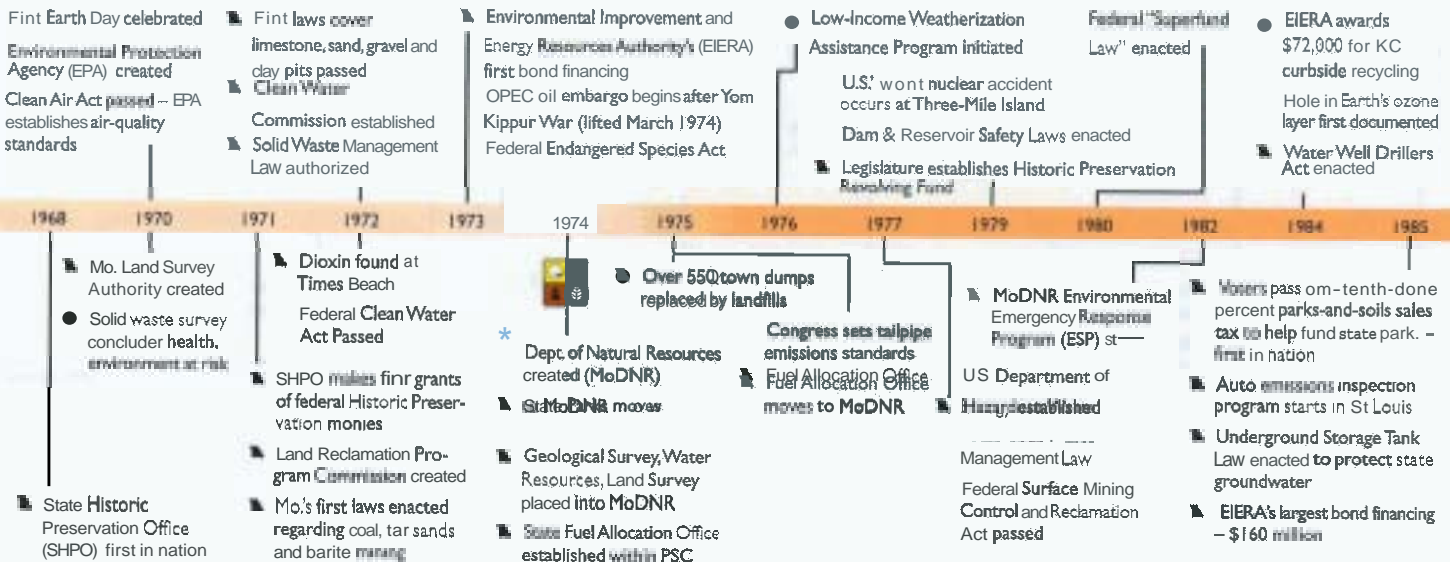
A growing interest in history led to the inception of the Missouri Historic Preservation Tax Credit program in 1998. Through this program, a 25 percent state tax credit was made available for the rehabilitation costs of qualified projects. This program has helped to save many buildings across Missouri, physical reminders of the state's history.

"It is the perfect public-private partnership," said Carolyn Hewes

The 1990s: Great Floods, Air Quality Improvements Mark Decade

The '90s served as an important turning point in efforts to improve air quality in Kansas City and St. Louis. Both areas struggled for years with ground-level ozone, which causes throat irritation, congestion, chest pains, nausea and labored breathing as well as aggravation of existing lung or heart conditions, allergies and asthma.

Both communities failed to meet the federal one-hour standard for this pollutant. Throughout the 1990s, the Department of Natural Resources worked with these areas to introduce cleaner-burning gasoline and to implement vapor recovery programs at local gasoline stations. Both cities made dramatic progress, and Kansas City at-





Toft, executive director of the Landmarks Association of St. Louis Inc. It actually delivers \$1.50 for every \$1 in credits. Few if any other programs can match this record," she said.

Perhaps what most changed Missouri in this decade was the Great Flood of '93. The destruction of this flood reminded Missourians what a powerful force the Missouri River could be. Homes, businesses and entire communities were devastated by this natural disaster. The Department of Natural Resources worked with affected areas on several fronts, including helping them ensure clean, safe drinking water supplies.

Bill Hills, now an environmental engineer in the department's Kansas City Regional Office, supervised staff who were responsible for inspecting water systems in northwestern Missouri during the flood. Hills says many communities are now better prepared as a result of the lessons learned in 1993.

"The flood of '93 was very devastating financially to a few water systems and a lot of trouble to others due to loss of pressure and available water resulting in long-term boil orders, which direct residents to boil water before use," Hills said. "As a result of the flood, systems have made some ... modifications ... to better protect them from high water levels."

The 1993 preparations would serve Missouri well in 1995, when a record western snowpack descended into the Missouri River basin, joining heavy May rains. Many river management

decisions made in 1993 worked. Some did not. Federal agencies would join the department and other state agencies in several states

in rethinking natural resource management of the big river systems.



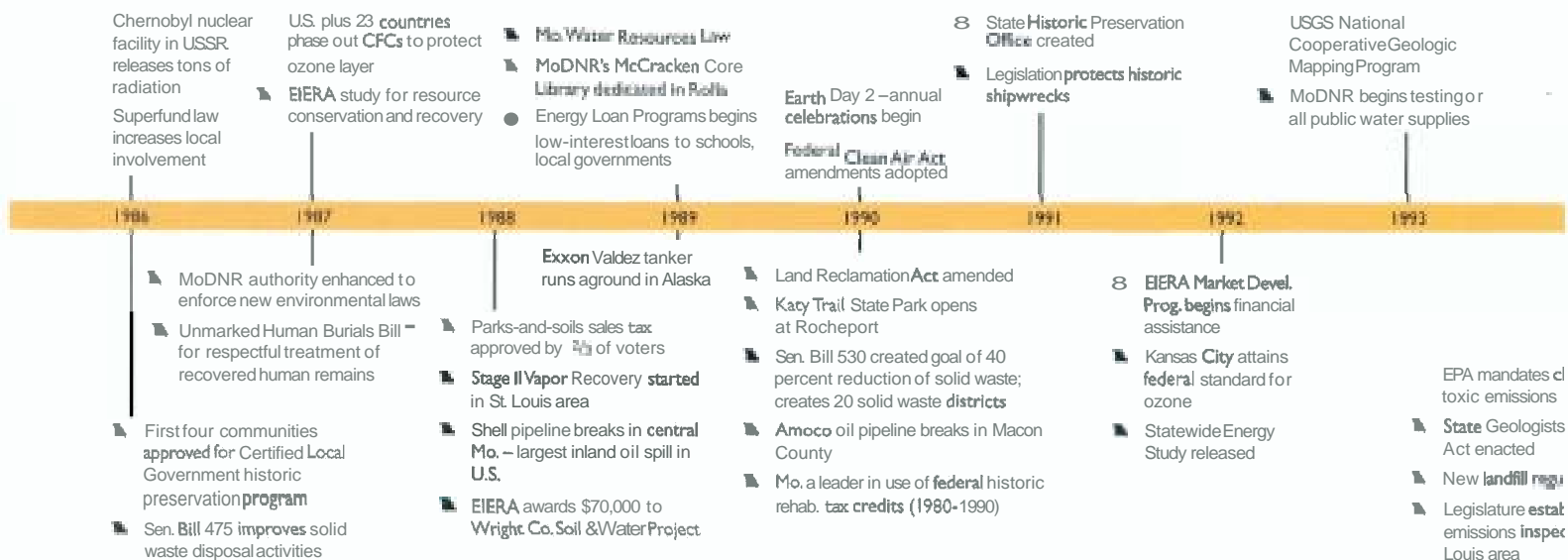
2001: A Changed World

The terrorist attacks of Sept. 11, 2001, with their impact on the economy and the subsequent military campaigns, have prompted many to recast environmental matters, especially energy issues, as matters of homeland defense. Once again, the nation's leaders are reviewing the stability, safety and affordability of our energy resources.

"The OPEC oil embargo and related energy shortages and gas lines in the 1970s were a cold, stark wake-up call to an economic Achilles' heel — our dependence on foreign oil," Randolph said. "Now, three decades later, we're reminded once again that regardless of whether the economy is doing well or struggling, we are still vulnerable."

This tragic event also brought renewed attention to the department's Hazardous Waste Program, which helps ensure responsible management during generation and handling of hazardous waste, cleanup of existing contamination, hazardous substance spills and releases and threats to homeland security. This work is funded by a fees bill required of Missouri's hazardous waste generators, which will expire, if not renewed by Jan. 1, 2005.

Recent events in Herculaneum have significantly shaped the face of environmental protection for this decade as well. In 2001, the Department of Natural Resources investigated dust spilled on the streets of Herculaneum by trucks from the Doe Run Company lead smelter. Staff collected a sample of this dust. Results of the sample and subsequent investigations by the department and the U.S. Environmental Protection Agency (EPA) revealed that the dust contained extremely high concentrations of lead and seemed to be associated with haul routes in and out of





Herculaneum. Levels of lead contamination ranged from 30,000 parts per million to 300,000 parts per million, which is between 75 to 750 times the established health-based levels.

In the following weeks, the department continued to observe violations of clean air laws associated with this facility as well. In September 2001, the EPA, in conjunction with the Department of Natural Resources, directed the company to replace soil in Herculaneum that had been contaminated by lead from the smelter's trucks and emissions. The department also issued an order detailing the steps the Doe Run Company would be required to take to reduce the public health and environmental threat. In 2002, the State of Missouri negotiated a buyout of 160 homes near the smelter.



What Lies Ahead?

Many new environmental issues are emerging. As tourism thrives, protecting Table Rock Lake and the White River Basin becomes not only an environmental priority, but an economic one as well. According to Diana Sheridan, former executive director of the James River Basin Partnership, the key to success will be community involvement.

"In order to positively impact the effects of non-point pollution, all individuals must contribute to the effort," Sheridan said. "We strive to do this through voluntary-based programs — what citizens can do individually at their farms, businesses and homes to improve water quality." The economic significance of Missouri's state parks also is more important than ever. Research conducted by the University of Missouri-Columbia recently showed that these parks bring \$538 million to the state's economy annually.

The threat of West Nile virus also has become much more prominent. Abandoned tires make perfect breeding grounds for mosquitoes, the main carrier of this virus. The department has supported community efforts to clean up waste tires and reduce the spread of this virus.

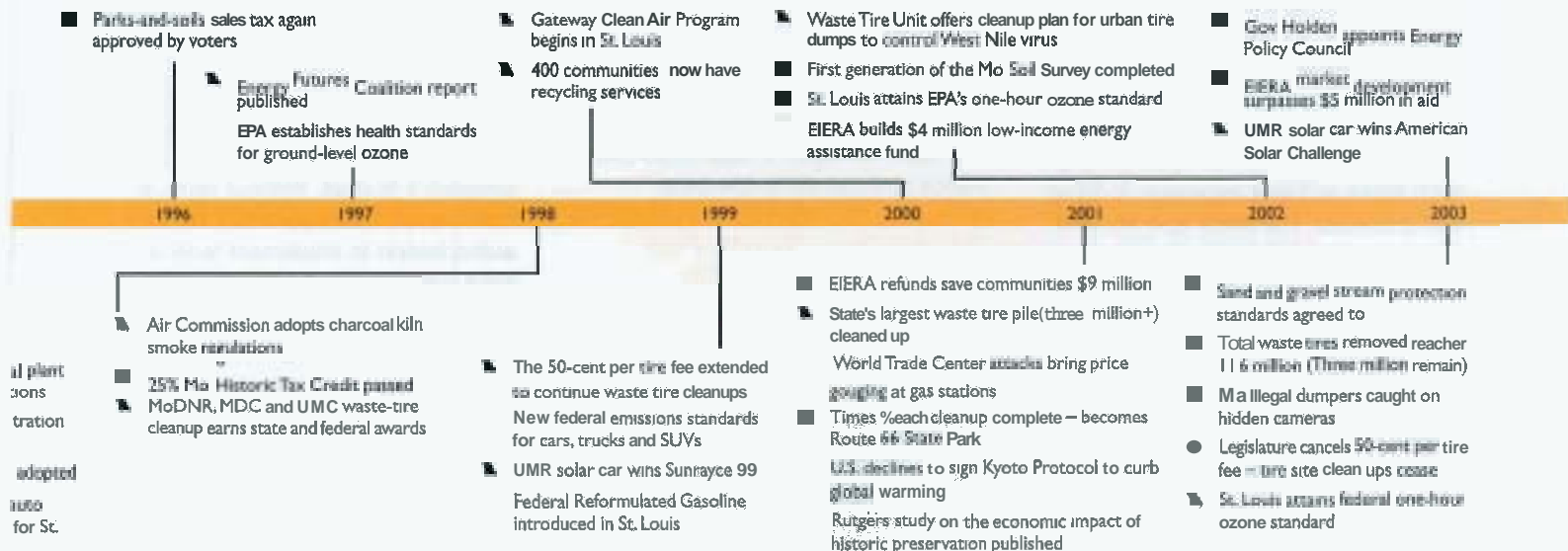
More than 11 million tires have been picked up in Missouri, but at least 3.3 million known waste tires remain. This effort is supported by a 50-cent-per-tire waste tire fee, which was not

extended during the regular 2003 legislative session and will expire Jan. 1, 2004. The state will no longer have money to clean up and prevent waste tire dumps. "States that have canceled waste tire collection fees have documented a rapid return of waste tire piles," said Steve Mahfood, director of the Department of Natural Resources. "Individual consumers have no viable way of disposing of them, and recycling and tire-fuel facilities also have been impacted economically."



"It's been an exciting 30 years," said Steve Mahfood, director of the Department of Natural Resources. "The people of Missouri have made tremendous strides in improving our rivers, lakes and streams, our land, our air quality, our energy use and our parks. The health of our families and the health of our economy rely upon our ability to continue this success in the new millennium."

Kathy Deters is a public information coordinator in the department's Outreach and Assistance Center.



EMI Training for Local Governments

The department's Environmental Management Institute is a two-day workshop for local government officials, staff and their assistance providers. It trains them on the basic environmental and related issues they face: drinking water, wastewater, storm water, solid and hazardous waste, rate setting and finances, Sunshine Law, energy conservation, planning and funding projects. EMI workshops have been held all around Missouri within a 30-mile drive of nearly every community. The department just completed the sixth year of EMI. To date, 34 workshop trainings have been held with 813 participants. In 1999, the EMI development team was given the Governor's Award for Quality and Productivity. To learn more, contact the department at 1-800-361-4827 or (573) 526-6627.

State Parks Benefit Missouri's Economy

A new study shows that Missouri state parks and historic sites do more than provide great places to enjoy nature and history – they also benefit the state economically.

A recent study conducted by the University of Missouri-Columbia for the Missouri Department of Natural Resources found that in 2002, visitors spent a total of \$410 million on trips to state parks and historic sites. When this amount is spent and re-spent in the economy, it brings the state park system's overall economic impact in the state to \$538 million annually. The total economic impact is based on any sale associated with the trip, including such items as travel expenses, lodging and groceries. The study also showed that state park visitor expenditures support 7,660 jobs and generate \$162 million in income.

According to the study, about 24 percent of the total \$410 million, or about \$100 million, spent by state park visitors came from out-of-state residents. This means that once the money is spent and re-spent in the economy, non-resident state park visi-

tors generated \$140 million in total sales in Missouri's economy. Also, the out-of-state residents' expenditures support 2,013 jobs and generate \$43 million in income.

Almost 18 million people annually visit Missouri's 83 state parks and historic sites.

Online Database for E-Emergencies

The Missouri Department of Natural Resources provides daily support and protection for the citizens of Missouri during environmental emergencies. The department's Environmental Emergency Response has on-scene coordinators located throughout the state and available 24-hours a day, seven days a week to respond to hazardous substance spills.

Now, anyone with access to a computer can see all environmental emergency incidents reported to the department. The database allows you to search for environmental emergency incidents by county, cause, date, type of spill or kind of property involved since 1993. The Environmental Emergency Response System database is now available on the department's Web site at [<http://www.dnr.mo.gov/meetings/index.do>].

The department's environmental emergency response team is funded from a hazardous waste generator fee. The fee will expire in December 2004 unless it is extended in the upcoming legislative session.

For more information, call the department's Environmental Services Program at (573) 526-3315 or 1-800-361-4827. To report a hazardous substance spill call (573) 634-2436.

Hazardous Waste Fee Extension Meetings



The Missouri Department of Natural Resources has held several hazardous waste fee extension stakeholder meetings. Participants from various Missouri indus-

tries, businesses, environmental attorneys, consultants and legislators discussed potential consequences if the category and land disposal fees expire. The fees will expire on Jan. 1, 2005, unless they are extended in the upcoming legislative session.

Meeting topics included ways to improve hazardous waste generator summary report forms, clarify fee details and costs, and steps toward obtaining legislative approval.

Those attending the stakeholders meetings expressed generally favorable support on extending the fees for some period and made recommendations for the department to consider.

The category and land disposal fees support a substantial number of the department's activities to protect Missouri citizens from the dangers posed by hazardous waste. Those paying the fees are Missouri businesses and individuals that generate hazardous waste; and out of state generators that use Missouri facilities for treatment, storage or disposal. For more information contact the department's Hazardous Waste Program at 1-800-361-4827 or (573) 751-3553.

Solid Waste Tonnage Fee

Imagine what life might be like if no one came by to pick up your trash because there was nowhere to take it. Your trash is not going away, but the landfill where it goes might be.

Beginning July 1, 2003, the Solid Waste Management Program lost all of its general revenue, 59 percent of the program's budget. Without replacement funds, the department will lose authorization to implement federal solid waste law and will reduce the services the department presently provides to protect public health and the quality of Missouri's environment. Federal law would prohibit new landfills in one-third of Missouri. The state would lose approval of any solid waste facilities and no improvements or expansions of active landfills, which



will soon result in closing existing landfills. The cost of waste disposal will increase dramatically causing illegal dumping to increase substantially, as it has elsewhere.

The Solid Waste Management Fund was established in 1990 to increase recycling efforts and assure proper disposal of solid waste in Missouri. A \$2.04 per ton fee is paid for waste disposed of in Missouri landfills or sent out of state through a permitted transfer station and deposited in the fund. This fee, in addition to general revenue, provided the funds needed to support the department's Solid Waste Management Program efforts.

The department recently asked a group of citizens representing a broad range of solid waste interests to offer solutions to the funding shortfall. To replace lost general revenue and avoid the adverse effects listed above without increasing the existing tonnage fee, the group suggested that current money directed to project grants be redirected to maintain program activities.

For more information, contact the department's Solid Waste Management Program at 1-800-361-4827 or (573) 751-5401.

Tree Planting Project Improves River Bottoms



For more than 25 central Missouri high school science students, the Big Muddy National Fish & Wildlife Refuge became their classroom for a day in early November, and their pencils and textbooks were replaced by shovels and saplings.

The applied-science class from Columbia's Hickman High School took to the refuge west of Columbia as part of an effort to reintroduce native tree species to the area. With shovels in hand, the youth planted several rows of pin oaks with the ultimate goal of improving the wildlife habitat along the Missouri River refuge. Extensive log-

ging to clear farmland, provide wood for steamboats and building materials removed a significant amount of the mature hardwood forests from the river system.

"The goal of planting these trees is to help accelerate the establishment of hardwood trees in the river plain," said Bryan Hopkins, an environmental education specialist with the Missouri Department of Natural Resources.

The program was a joint effort of the Department of Natural Resources and Lining Lands and Waters, a not-

for-profit river cleanup and protection group led by Chad Pregrake. The planting exercise gave students an opportunity to see functional applications of natural resource preservation and restoration.

"If you come out and actually plant the trees, you can get an appreciation for what the environmental department and people like Chad are trying to do," student Chris Thompson told the Columbia *Daily Tribune*. That observation from the students is the true benefit of the program, Hopkins said.

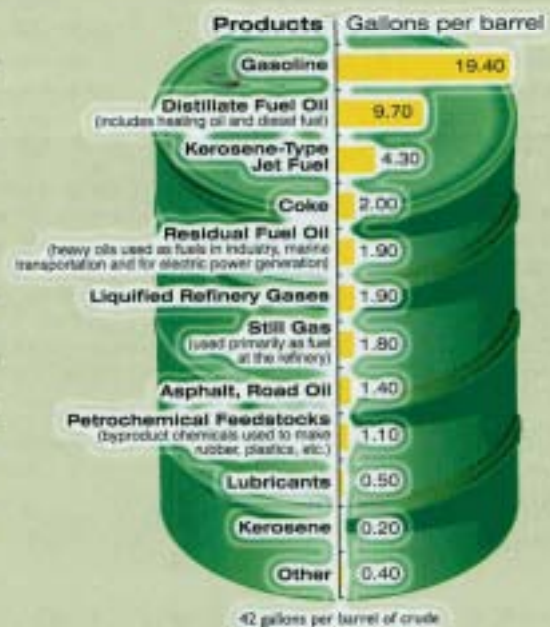


A Barrel of Oil: The Rest of the Story

Our Spring/Summer 2003 Teacher's Notebook on do-it-yourself (DIY) oil changing prompted a lot of questions. The article mentioned that from one barrel of crude oil (42 gallons), only approximately 2.5 quarts of motor oil could be extracted. Many wanted to know what the rest of the barrel was used for. Here is a graphic that details the answer. We do not have room to list the ever-growing number of petrochemical products available to today's consumer. Some helpful sources for additional information are listed below.

Statistics continue to show that, of the hundreds of millions of gallons of motor oil sold each year, approximately half are sold to do-it-yourselfers. According to the U.S. Environmental Protection Agency, improperly disposed oil from DIYers was the nation's single largest source of oil pollution. With over 12,000 licensed drop-off centers nationally, finding one in your area is easy. The Web site [earth911.org] is a good source.

Several readers asked about re-refined motor oil, and wondered if it was okay to use in their cars. Absolutely. It must meet the same standards as virgin motor oil. Its availability is spotty, but growing. As opposed to reprocessed oil, which comprises the main use of recycled motor oil, re-refined oil can be returned to its original state multiple times. Additional information can be found at [www.eia.doe.gov], a Web site of the U.S. Department of Energy's Energy Information Administration, or [api-ec.api.org/about/index.cfm], an American Petroleum Institute site.



"The real benefit lies in building a personal connection in the students to the Missouri River," he said. "The river is one of our state's greatest natural resources, and yet, most kids don't even consider the river as they pass by."

"The magic is that they could come back in 10 years and place their hand on a tree trunk they helped to bring back to the river system," Hopkins said.

In addition to the pin oaks planted by the students, the U.S. Fish and Wildlife Service and the Army Corps of Engineers have been trying to reintroduce hickory and pecan trees to the river bottoms. Once native to the area, they have been squeezed out by faster-growing cottonwoods.

The 10,400-acre Big Muddy National Fish and Wildlife Refuge consists of multiple sites along the

Missouri River between St. Louis and Kansas City. Established in 1994, much of the refuge was farmland purchased by the federal government following the '93 and '95 floods.

For more information on the Department of Natural Resources' environmental education program, visit the department's Web site at [www.dnr.mo.gov/oac/communications.htm]. For more on the Big Muddy National Fish and Wildlife Refuge, visit the U.S. Fish and Wildlife Service Web site at [<http://midwest.fws.gov/BigMuddy/>]. Living Lands and Waters' Web address is [www.livinglandsandwaters.org]

Springfield Program Invests in Wind

Consumers in Springfield are promoting the use of wind-generated electricity through City Utilities' renewable energy program, WindCurrent. The

program began in 2000 and allows City Utilities customers to pay a premium to purchase renewable energy from Kansas wind farms. Through the program, the utility purchases 100 kilowatt-hour blocks on behalf of those customers willing to pay an additional \$5 over the cost of a same-sized block of electricity generated by traditional methods at regular prices.

More than 150 customers purchase a total of 290 energy blocks. WindCurrent members can increase or decrease the number of blocks purchased at any time.

"They're basically making an investment in the technology," said Cara Shaefer, a CU spokesperson.

The energy purchased through the WindCurrent program is part of a total of 35 megawatt hours of renewable energy CU purchases monthly, Shaefer said.

I was very disappointed to read that, due to the state budget crisis, *Missouri Resources* had been reduced from four to three issues per year. I look forward to receiving each issue. Whether it is an article about successful recycling programs, one of our many beautiful state parks or historic sites, or the work being done by your department to improve water quality in our state, it is always interesting, well-written and informative. The loss of a fourth issue is very unfortunate.

I enjoy *Missouri Resources* much more than many of the magazines I pay to receive and sincerely hope that the fourth issue will return in future years.

W. Dudley McCarter
St. Louis

I found your Spring/Summer 2003 issue of *Missouri Resources* especially enticing because of two of your articles. The first was the article on Jim Morris entitled, "Gift of Unique Diversity." Crowley's Ridge was only 3-5 miles (as the crow flies) southeast of Wilhelmina where I grew up. By road, it was approximately 10 miles, back in the 1940 and 1950s! And Campbell was only 7 miles away, where I graduated from high school.

The second appealing article was "Lake of the Ozarks State Park." I've never been a camper, but, since I now live in Osage Beach, found that article very interesting. My recently deceased husband dearly loved the lake. He coerced me to leave my U.S. Army job and move down here from St. Louis in 1992.

During the winter of 1997, 75-100 Canada geese flew into our lake cove. They stayed overnight, then flew out again. What a sight! I'd never even seen a Canada goose before – did not know what those large animals were! I now routinely see them, as well as mallards, wood ducks, opossums, raccoons, deer, fox, etc.

Carol C. Martin
Osage Beach

My mother (Marjorie Smithson) has enjoyed the *Missouri Resources* for many years, but is now in a nursing home, reading is not easy anymore and her attention span isn't long. I read to her from my copy, so she doesn't need this her subscription any longer. Thanks!

Bev Duncan
St. Louis

Editor's Note:

Readers who prefer an audio cassette version of *Missouri Resources* can contact the Wolfner Library at 1-800-392-2614 to have a copy mailed automatically each issue. Listeners may keep the tape, but they request that the container be returned.

LETTERS



Letters intended for publication should be addressed to "Letters," *Missouri Resources*, P.O. Box 176, Jefferson City, MO 65102-0176 or faxed to (573) 751-8084, attention: "Letters." Please include your name, address and daytime phone number. Space may require us to edit your letter. You also can e-mail *Missouri Resources* staff at moresdnr@dnr.mo.gov

WindCurrent members also receive an 18" windsock and window decal. Those interested in participating in the program can call City Utilities at (417) 863-9000 or visit the company's Web site at [www.cityutil.com/services/ser_wind.htm].

Missouri Wind Resource Maps Released



The Missouri Department of Natural Resources' Energy Center has released a series of maps detailing the extent of Missouri's potential wind resources.

The maps, commissioned by the department from the firm TrueWind Solutions, can be used by Missouri utilities and property owners to determine the viability of using wind turbines to generate electricity. Recent technological improvements have made it possible to generate energy from lower wind levels.

"Other Midwest states have begun to realize the economic benefits from renewable energy industries; and many of these benefits accrue to the rural economy," said Anita Randolph, director of the Missouri Energy Center. "The maps predict that the largest areas with the highest average wind speeds are to be found in northwest Missouri, however, there are smaller areas with similar wind speeds at other locations," she added.

Because of the improved efficiency of wind turbines and government policies encouraging wind energy investments, wind-driven electrical generation is the fastest growing source of new electrical generation capacity in the United States.

The preliminary versions of the wind maps, which are based on estimated wind speeds at 30, 50, 75 and 100 meters, are now available on the Missouri Energy Center's Web pages [www.dnr.mo.gov/energy]. These maps are considered "interim final" and are subject to independent validation by the National Renewable Energy Laboratory and consulting meteorolo-

gists. The project is funded in part by the U.S. Department of Energy's Wind Powering America program.

While the maps represent an accurate overall picture of Missouri's wind energy resource, estimates at any specific location should be confirmed by additional wind measurements. The final maps will be available on CD-ROM. Those wishing to be notified of the release of the final maps should join the Energy Center's e-mail list at [www.dnr.mo.gov/oac/oac_lists.html].

More Campgrounds Accept Reservations

Following a successful first year of operation for the centralized camp-



ground reservation system, more facilities are being added to the system.

The centralized camp-

ground reservation system was developed to make reserving campsites easier and more convenient. The first year, 2,000 campsites in 24 state parks were available for reservation. In 2004, 350 more in 10 state parks and historic sites are being added.

New facilities in the system beginning Jan. 1, 2004, include Arrow Rock State Historic Site and Big Lake, Crowder, Graham Cave, Lewis and Clark, Pershing, **Robertsville**, Thousand Hills, Wallace and **Weston Bend** state parks. Onondaga Cave State Park will also offer reservable sites later in 2004 after renovations are completed on the campground.

A portion of campsites are still available on a first-come, first-served basis at all campgrounds, except Johnson's Shut-Ins State Park, which is 100 percent reservable.

Campers can make reservations up to six months in advance by calling 1-877-ICampMO (1-877-422-6766) from 7 a.m. to 10 p.m. seven days a week or 24 hours a day on the Web at [www.mostateparks.com]. Regular camping fees apply as well as an \$8.50 per site reservation fee. Payment

can be made by credit card, debit card, check or money order.

For more information, call 1-800- or visit the Web address listed above.

Brownfield City Wins EPA's Phoenix Award



The Westside Business Park, a participant in the Missouri Department of Natural Resources' popular Brownfields/Voluntary

Cleanup Program, recently received the U.S. Environmental Protection Agency's 2003 Phoenix Award for excellence in brownfield site redevelopment.

The award recognizes the site, located on Southwest Boulevard in Kansas City, as one of the nation's premier brownfield redevelopment projects. The agency chose 10 recipients to serve as models and inspiration for other communities seeking to revitalize their landscapes.

The 22-acre former rail yard, located in the heart of a historically Hispanic neighborhood, was used for servicing passenger coaches and locomotives from Union Station since the turn of the 20th century. The site was abandoned in the 1970s.

Recognizing the rail yard as a key redevelopment site, the Hispanic Economic Development Corporation enrolled the site in the Missouri Department of Natural Resources' Brownfields/Voluntary Cleanup Program and teamed up with DST Realty, Inc. a subsidiary of DST Systems, Inc. to clean up the property. Cleanup included the removal of 60,000 tons of soil and cinders from the rail yard.

A prominent historic preservation architect used the original 1903 drawings to convert the 62,000-square-foot engine service roundhouse into a unique office space in Kansas City. The cleanup and redevelopment of this site represents a milestone for brownfield redevelopment in Kansas City's west side. The productive reuse of the site

appears to **be** spurring other nearby historic redevelopment.

The award represents the fifth Phoenix award given to a Missouri brownfield site. In September 2004, the national brownfields conference will come to St. Louis. The Department of Natural Resources plans to take an active role in organizing and promoting the conference to draw public attention to environmental cleanup, economic growth and job creation through the cleanup and reuse of Missouri's brownfields.

For more information on this project or to find out how to enroll in the Missouri Brownfields/Voluntary Cleanup Program, contact the Department of Natural Resources at 1-800-361-4827 or (573) 526-8913.

Truman State Starts Glass Recycling

What started out as a dream 16 months ago is now a reality. With the help of a grant from the State of Missouri Region C Solid Waste Management District, Truman State University now offers area residents the option of recycling glass and use of the resulting product.

Although successful, the program was receiving many inquiries about glass recycling from its customers. Howard Worcester and Heidi

Templeton of the university initiated efforts to locate the equipment and funding to accomplish this. They met with the Kirksville City Council and county commission to discuss options. It was

TIME EXPOSURES



When the Westhoff Studio took this picture in 1938, workers were digging out the basement of the Columbia power plant as part of an improvement project. Columbia voters approved a decision to form the publicly owned utility in 1904 after years of inadequate water and expensive electricity. Columbia Water and Light is one of 35 municipally owned power plants in Missouri. Most, like Columbia, provide power at times of peak energy demand to supplement electricity bought off the power grid. The Boone County Historical Society provided the photograph from their collection of over one-half million glass plates and negatives. The collection spans from 1867 until the mid-twentieth century.

Send your photo to "Time Exposures/ c/o Missouri Resources, P.O. Box 176, Jefferson City, MO 65102-0176. All pictures will be returned via insured mail. Pre-1970 environmental and natural resource photos from Missouri will be considered. Please try to include the date and location of the picture, a brief description and any related historic details that might be of interest to our readers.

agreed that Truman State would house the machine and, in turn, the city and county agreed to help promote the effort and to purchase the recycled glass byproduct.

Truman State's grant application was approved in June 2003 by the Region C Solid Waste Management District. The machine grinds glass to a fine sand which can be used in place of regular sand for drainage and pot-hole fill, ice melt, and as an aggregate in road construction materials. In addition to using it as ice melt on the Truman campus, several other projects, including a new sidewalk at a senior center, have been lined up to take advantage of the recycled glass.

Community support is critical to the success of the recycling effort.

Because the university does not have the equipment to transport glass, citizens are required to bring their rinsed glass to the Truman Recycling Center.

The grant is funded from the state's Solid Waste Management Fund that is created from tonnage fees (see related news brief, page 14) collected by the Missouri Department of Natural Resources when solid wastes are disposed of at a Missouri landfill or taken to a transfer station that moves wastes to out-of-state disposal facilities.

For Department of Natural Resources news releases on the Web, visit [www.dnr.mo.gov/newsrel].



Brad Harris Safer, Faster, Cheaper

The war on drugs can be messy, expensive and dangerous to clean up. But environmental specialist Brad Harris's efforts to make methamphetamine drug lab cleanup much easier resulted in his recognition as the June 2003 State Employee of the Month. Harris, who works in the Air and Land Protection Division's Environmental Emergency Response (EER) section, has served as the department's key representative to the interagency group that organized Missouri's Clandestine Drug Lab Collection Station Program. The program allows Missouri law officers and firefighters to safely dispose of the dangerous chemicals used in the manufacture of illegal drugs, especially methamphetamine.

"I can't overstate how important this cooperative program with DNR has been," said Capt. Ron Replogle, director of the Missouri State Highway Patrol's Division of Drug and Crime Control. "The unique chemicals used in the processing of meth are a risk to our officers. Exposure and inhalation when handling, to just knowing the risks of

fire or explosion during raids are very serious. This program provides a safe environment for transportation and disposal," Replogle added.

Through the program, nearly 600 Missouri law enforcement officers and firefighters have received specialized training and equipment that will allow them to safely dismantle clandestine drug labs. The program has provided 20 specially designed chemical storage buildings in communities throughout the state. Rather than waiting for contractors, local officials can immediately remove the hazardous chemicals, cutting the cleanup costs from nearly \$5,000 per lab to \$250.



Brad Harris

Since the inception of the program, nearly 251,000 pounds of wastes associated with more than 5,900 labs have been disposed of through the drug lab collection stations. "Brad traveled across the state to identify willing agencies that would volunteer their services to serve as a 'gatekeeper' (for the collection stations)," said Alan Reinkemeyer, Harris's supervisor in the EER section. Because of the role he has played in the development of the clandestine drug lab program, Harris has been called upon to work with several other state and federal agencies that are using Missouri's program as the model for their own.

"The biggest benefit to us has been the collection station," said Special Agent Patti Talbert of the Northeast Missouri Narcotics Task Force, based in Hannibal. "We are a pretty small unit and cover a four-county area. Not having to wait for hours for subcontractors to arrive and clean up the hazardous materials is of great benefit to us. Our officers can immediately transport to the containment unit," Talbert said. "Brad and the EER group are always available for us, and when we need technical assistance, we get it fast."

According to Harris, a sustained funding source is needed to continue the program and health and safety training courses for Missouri law enforcement. The Department of Natural Resources continues to be available to assist law enforcement and fire services, and provides technical and financial support to all of Missouri's clandestine drug lab collection stations.

Harris, who lives in Jefferson City, has been with the department since September 1989.

Tim Thorn Mediation, Not Litigation

Tim Thorn was named the May 2003 State of Missouri Employee of the Month. Thorn, formerly a Land Reclamation Specialist with the Missouri Department of Natural Resources' Air and Land Protection Division, was called upon to mediate an environmental cleanup between St. Robert residents and a local mining operation

in Pulaski County. The department had received a complaint in May 2002 that many residents of St. Robert had up to a foot of sand covering their yards and farm fields following spring flooding. Within a week of the complaint, Thorn visited the site, documented the incident and determined that the problem was the result of a poorly protected stockpile of sand at a nearby sand and gravel facility. Working with the residents and the company, he developed a cleanup plan and supervised the work to ensure the satisfaction of the landowners and company alike.



Tim Thorn

"Tim followed through (on the problem) when it became apparent that

the company was not going to do anything about the situation," said Ray Cordry, of St. Robert. The Cordry's property was covered with sand immediately after the flood.

Thorn's extra effort not only swiftly solved the problem for both parties, but saved time and money by avoiding lengthy and expensive lawsuits that most probably would have been filed. "If Tim had just gone 'by the book' in this instance, both parties would probably ended up in court in frustration over the incident," said Larry Coen, staff director of the department's Land Reclamation Program.

Thorn indicated that happy endings are difficult to achieve when an impasse has been reached – especially when people's personal property has been affected.

"I was fortunate to have participated in a situation where the end result was beneficial to the mining company and the landowner," Thorn said. "The work I performed during my tenure with the Land Reclamation Program is reflective of the dedication shown by other inspectors there."

According to Coen, the primary goal of the program is to protect the environment from the effects of mining. But along with that come many shorter goals that take up most of the time of his inspectors in the Land Reclamation Program. That can create a complicated task when the varied interests of all parties are considered. The regulated community and the residents and landowners who live next to or can be affected by its actions deserve equal consideration – both separately and collectively. But no less important, the good of the environment as a whole must be taken into account.

"We regulate, we permit, we investigate, we enforce. All of these are just components of our real goal – to protect the environment. When Tim caused the landowner's farmland to be cleaned up, he was helping us achieve our highest goal of environmental protection," Coen said. "Instead of just doing his piece of the job as an inspector, he saw the opportunity to personally protect the environment from the harmful effects of mining. When our staff members do that, everybody wins."

Thorn is a resident of Arnold and now works for the Boeing Corporation in St. Louis.



Ha Ha Tonka

by Larry Webb
photographs by Scott Myers



Ha Ha Tonka State Park is truly a place of great wonder and awe. The park's rich natural history, geologic grandeur and unique cultural features make it a great place to enjoy Missouri's beautiful outdoors.

The Missouri Department of Natural Resources purchased Ha Ha Tonka in 1978 after many attempts dating back to 1909. Since the park's dedication in 1979, it has become one of the most visited state parks. According to Rural *Missourian*, Ha Ha Tonka has been voted the favorite state park of Missourians for the last two years. The 3,503-acre park contains two Missouri natural areas: a 70-acre Karst Natural Area and a 953-acre Savanna Natural Area, which represent excellent examples of two Missouri natural landscapes. The park also contains the ruins of an early 20th century castlelike mansion, 17 miles of hiking trails and plenty of picnic sites.

The ruins of the castle sit on top of a 250-foot bluff overlooking Ha Ha Tonka Spring and the Lake of the Ozarks. This is no doubt the biggest reason for the park's nearly half-million annual visitors. The "castle" was intended for use as a vacation home for Robert Snyder, a wealthy Kansas City businessman. He started building his dream home in 1905 with nearly 200 employees including Scottish stone masons.

By 1906, Snyder had built an 80-foot sandstone water tower, a carriage house and had finished the native sandstone walls of the mansion. Tragedy struck in October 1906 when Snyder was killed in an automobile accident. Three of Snyder's sons, Robert Jr., Leroy and Kenneth Snyder, finished the building in 1922 and used it as a summer home into the 1930s.

In 1937, the building was leased to Josephine Ellis, who operated it as a hotel until October 1942 when a flue fire spread



State Park

to the cedar shake roof. The castle and carriage house were total losses.

Although most visitors come to see the castle ruins, many find the park has much more to offer. Throughout history, people have been attracted to Ha Ha Tonka because of its geology, especially Ha Ha Tonka Spring. The Osage Indians were among the earliest inhabitants of the Ha Ha Tonka area. They likely settled into the area because of Ha Ha Tonka Spring and the Niangua River. Local folklore attributes the name Ha Ha Tonka to the Osage Indians. The stories resulted in the town of Gunter changing its name to Ha Ha Tonka in the 1890s. The name stuck and became the official park name more than 80 years later in 1978.

Robert Snyder chose the bluff overlooking Ha Ha Tonka Spring for his mansion. Today, many still find their way to Ha Ha Tonka in search of its geologic wonder.

The park contains many caves, losing streams (streams that lose water underground), several large sinkholes, a 70-foot natural bridge and the 12th largest spring in the state. This type of geology is known as karst and Ha Ha Tonka State Park is one of the best places to see it.

Karst topography typically is found in areas with limestone or dolomite bedrock. It results from rainwater mixing with carbon dioxide, which slowly dissolves the bedrock, creating springs and caves. Karst topography can be found throughout the Ozarks and is responsible for one of Missouri's nicknames, The Cave State. Karst topography often results in a direct link between surface water and groundwater. This relationship is a sensitive one that can affect the quality of groundwater resources. Its karst topography is one of the main reasons that Ha Ha Tonka became a state park in 1978. Protection and interpretation of this sensitive resource is a

(Left) Hiking trails at Ha Ha Tonka State Park lead visitors to the park's many natural features. (Center) Native yellow coneflowers add a splash of color to the park's glades. (Right) Ruins of the castle, one of the park's main attractions, sit atop a bluff overlooking the Lake of the Ozarks.



(Above) More than 300 steps take visitors up the side of a bluff to scenic overlooks. (Right) Bluffs along the Coliseum Trail are an excellent example of karst topography, a dominant natural feature of Ha Ha Tonka State Park.



major part of the park's mission and goals.

Other features of Ha Ha Tonka are the woodland and glade complex. The most significant is the nearly 1,000-acre Ha Ha

Tonka Savanna Natural Area. It is recognized as one of the largest, best-preserved examples of a disappearing western Ozark native landscape. It often is used as a model, the site of workshops, field trips and for research by organizations throughout the Midwest and nation. This area is preserved in its natural state through an intensive prescribed fire program.

The Savanna Natural Area consists primarily of dry chert woodland and dolomite glades. The woodland areas have an overstory that is dominated by widely spaced post oaks and black oaks. A rich, dense, prairie-like herbaceous layer of plants such as little bluestem, rattlesnake master, wild quinine and wild indigo are plentiful there. The glades are typically southern and western hillsides are covered with thin soil and dolomite bedrock at or near the surface. These slopes are treeless with the exception of a few scattered eastern red cedar or blackjack oaks.

Herbaceous plants like yellow cone-flower, prairie dock, Missouri coneflower,

little bluestem and lead plant dominate the park's glades.

Ha Ha Tonka also offers recreational opportunities including hiking, fishing, scenic views and picnicking. The trails range from a short, paved interpretive loop to a rugged seven-mile backpack trail through Ha Ha Tonka Savanna Natural Area. There is plenty of room to fish along the banks of the Lake of the Ozarks and much of it is wheelchair accessible. Two picnic shelters are available for reservation and more than a dozen first-come, first-served picnic sites can be found in the park.

With such a unique mix of natural resources, cultural landmarks, folklore and recreational opportunities, Ha Ha Tonka State Park is an ideal spot for an outdoor day trip in Missouri. The park is located four miles west of Camdenton on State Road D or can be accessed at the 14-mile marker of the Niangua Arm of the Lake of the Ozarks. A stop at the Ha Ha Tonka State Park visitor center gives visitors a chance to get orientated, ask questions and get a park map. Those wanting more information about the park can call the park office at (573) 346-2986 or the Department of Natural Resources toll free at 1-800-334-6946 (voice) or 1-800-379-2419 (Telecommunications Device for the Deaf). Additional information also is available at [www.mostateparks.com].

Larry Webb is an interpretive resource specialist with the Department of Natural Resources at Ha Ha Tonka State Park.

Big River Educational Workshops

by Bryan Hopkins
photographs by Scott Myers

The lands of Missouri have long been influenced by its big river systems. Their waters provided paths for exploration, routes for settlement and movement of trade goods. The Mississippi and Missouri rivers, literally shape the state, defining the eastern border and a significant portion of the western edge. Both rivers are important as cultural and natural resources, with the waters of more than 30 states contributing to their flow. The rivers' fertile bottomlands provide habitat for an immense variety of wildlife, and they create unique

habitats for hundreds of different fish and mussel species.

An amazingly rich history is tied to these two rivers. Their waters have witnessed the rise and fall of the Indian mound-building societies, the exploration by the Corps of Discovery, and the drama and romance of the

Workshop participants learn the value of the Missouri and Mississippi rivers through firsthand experience. Some of the workshops take place aboard a floating classroom along with smaller excursion boats. Topics covered include wildlife restoration projects, river island habitats, tree planting initiatives, commercial fishing and river transportation systems. For more information and to register for a workshop, visit the department's Web site at (www.dnr.mo.gov/oac/river-cleanup.htm).

steamboat era. They facilitated the movement of both goods and people, resulting in the development of many of America's greatest cities.

Unfortunately, these great rivers also serve as a dumping ground for solid waste in the form of old tires, appliances, drums and an unending variety of other trash. Other less ob-

vious forms of pollution also affect these rivers such as sewage, detergents, fertilizers, pesticides, toxic chemicals and automotive oils. Both rivers have been impacted by alterations in flow, temperature and sediment load, and have experienced significant changes in the 200 years since Meriwether Lewis and William Clark first set out upon their waters.

The Rivers as a Teaching

The Missouri and Mississippi rivers are national treasures. These rivers offer an ideal platform for teaching about cultural history, as well as an evolving relationship. With our nation's natural resources. A series of Big River educational workshops have been developed by the Missouri Department of Natural Resources in cooperation with Chad Pregracke of Living Lands

WORKSHOP CONTENT

Watersheds: How they function and a "make and take" watershed model.

The river as a natural resource: drinking water use, receiving waters for municipal and industrial wastewater, agricultural activities in the flood plain, recreational and commercial fishing, and other recreational aspects.

Impacts on the river: Nonpoint source pollution (issues and prevention) along with other impacts (solid waste, loss of wetlands, etc.).

River stewardship: How to minimize impacts and get involved (Adopt-A-River Mile, StreamTeams, future cleanups, other educational resources).

Boat trips: Whenever practical, to allow participants to observe firsthand some unique aspects of the river (commercial fishing, reforestation efforts, riparian zones, lock and dams, etc.).

and Waters. Pregracke and his crew have been working hard to clean up the big rivers of the heartland and have conducted hundreds of community-based river cleanup events. Check the Living Lands and Waters Web site at [www.livinglandsandwaters.org] for more information. The river workshops occur directly on water aboard Living Lands and Waters' floating classroom and include trips in smaller boats to experience the river firsthand. The primary target audience for these workshops is the educational community. The general public and civic leaders wishing to learn more about the big rivers also are welcome.

To check when the next workshops are being offered and obtain lesson plans concerning our big rivers, please visit the department's Web site at [www.dnr.mo.gov/oac/river-cleanup.htm]. Environmental education staff can be reached by calling the department's Outreach and Assistance Center toll-free at 1-800-361-4827.

Come join us on one of our big rivers and experi-

ence the waters that have been integral to the development of the state of Missouri and our nation.

Bryan Hopkins is an environmental education specialist with the department's Outreach and Assistance Center.

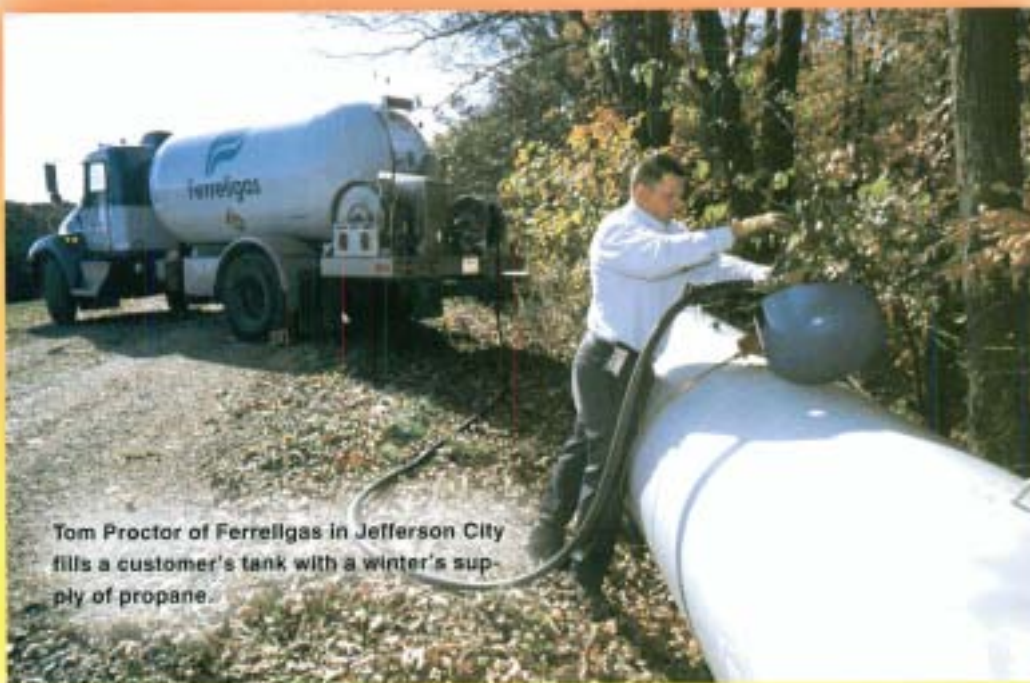
Workshop participants learn about the various things that impact water quality and what they personally can do to protect watersheds. In addition, participants receive educational materials on Big Rivers to take back their classrooms, civic groups or youth organizations.

Holding In The Heat

Efficiency Increases Comfort, Stretches Energy Dollars

by Kerry Cordray

photograph by Scott Myers



Tom Proctor of Ferrellgas in Jefferson City fills a customer's tank with a winter's supply of propane.

It happens every winter: as the temperature drops, the utility bills go up.

The good news is that homeowners can take some simple, inexpensive action that will reduce home heating and cooling costs, whether their homes use natural gas, propane or electricity for heating and cooking:

- Set back your thermostat. Turning your thermostat back 10 to 15 degrees for eight hours at night or while you're away can save five to 15 percent on your energy bills. Savings can be as much as one percent for each degree, if the setback period is at least eight hours long.
- Lower the thermostat on your water heater to 120 degrees. Many water heaters are set so hot that they not only waste energy but are also unsafe for children.
- Clean or replace furnace air fil-

ters once a month. Have your furnace professionally checked before each heating season to make sure it is running safely and efficiently.

- Seal air leaks around doors, windows, and holes through the foundation, walls and ceiling where plumbing and electrical penetrations occur.
- Insulate and seal heating ducts located in unconditioned areas such as attics and crawl spaces.
- Upgrade insulation levels to an R-38 in the attic, R-19 in the walls and R-19 in the floor (if located over a crawl space or unconditioned space). R-value shows how well a material resists heat flow.

The higher the R-value, the greater the resistance. If you're planning to replace a furnace, or other heating system, or air conditioner, install

highly efficient equipment, such as those bearing an official ENERGY STAR® label.

After energy-efficiency improvements like these, a home heated with propane, natural gas or electricity can save up to 30 percent on space heating costs. Lasting improvements are installed in the home, resulting in lower utility bills year after year.


Although all home and business owners feel the pinch of rising energy costs, the greatest burden is to low-income families. It is worthwhile for all homeowners to explore the lower-cost tips de-

scribed above, which will still produce real energy and cost savings regardless of home size or income. Missouri's Low-Income Weatherization Assistance Program assists some households with bigger energy-efficiency improvements.

For more information call the department's Energy Center at 1-800-361-4827 or (573) 751-3443. Information also is available on the department's Web site at [www.dnr.mo.gov/heatingcosts.htm] and on the U.S. Department of Energy's Web site at [www.energysavers.gov].

With a few home improvements, almost all of us can do a better job of holding in the heat, and holding onto a few more dollars.

Kerry Cordray is division information officer for the department's Outreach and Assistance Center



**MISSOURI DEPARTMENT
OF NATURAL RESOURCES**
P.O. Box 176
Jefferson City, MO 65102-0176
1-800-351-4827

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